

AMENDMENTS TO THE CLAIMS:

The listing of claims shown below will replace all prior versions, and listings of claims in the Application:

1-65 (Cancelled)

1
~~66~~. (New) Apparatus for interconnecting a plurality of ports for transferring received Fibre Channel frames, the Fibre Channel frames including frame data, between multiple attached devices comprising:

a first port adapted to support multiple link speeds,

a second port adapted to support at least one link speed,

connectivity apparatus, the connectivity apparatus disposed between and coupled to the first port and the second port, and

A
a plurality of data buses; the data buses connecting the first port to the connectivity apparatus,

wherein the number of data buses utilized to transfer the frame data received }
by the first port is the same irrespective of whether the link speeds of the first and }
second port are the same or different.

2
~~67~~. (New) The apparatus of claim ~~66~~ further including a processor and memory, and logic to couple them to the connectivity apparatus.

3
~~68~~. (New) The apparatus of claim ~~66~~ further including a set of registers to store pending route requests.

4
~~69~~. (New) The apparatus of claim ~~68~~ further including a hardware state machine coupled to the registers for inserting and removing route requests.

5
~~70~~. (New) The apparatus of claim ~~66~~ further including a processor and attached memory,

the memory containing instructions to convert Fibre Channel frames to Ethernet frames.

6 ~~71~~. (New) An interconnect system having a plurality of ports transferring received Fibre Channel frames between multiple attached devices comprising,

a first port supporting a first link speed,

a second port supporting a second link speed, the second link speed different from the first port link speed,

a third port supporting a third link speed, the third link speed is the same as either the first port link speed or the second port link speed,

a connectivity apparatus coupled to each port, affecting the transfer of frames between any two ports, and

the connectivity apparatus supporting a fixed frame transfer rate and a fixed number of data buses, the same frame transfer rate and the same number of data buses being used for each frame transferred between any two ports.

2 ~~72~~. (New) The interconnect system of Claim ⁶~~71~~ wherein the fixed frame transfer rate includes a fixed number of active data buses transferring actual data signals for all data transfers.

3 ~~73~~. (New) The interconnect system of Claim ⁶~~71~~ wherein the connectivity apparatus is clocked at the same frequency for every frame.

9 ~~74~~. (New) A switch having a plurality of ports for routing received Fibre Channel frames between multiple attached devices comprising,

a first port supporting a first link speed,

a second port supporting a second link speed, the second link speed different from the first port link speed,

a third port supporting a third link speed, the third link speed is the same as
either the first port link speed or the second port link speed,

a connectivity apparatus coupled to the first port and the second port for
selective interconnection there-between,

the connectivity apparatus transferring frames using a constant number of data
signals and a constant clock rate, having the same values between any two ports.

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~~10 76~~. (New) A method for interconnecting a plurality of ports for transferring received
Fibre Channel frames, the Fibre Channel frames including frame data, between multiple attached
devices, the method comprising the steps of:

receiving an incoming frame at a first port adapted to support multiple link
speeds,

determining the destination port to route the first frame,

the destination port's link speed being different from the first port, and

transferring the Fibre Channel frame from the first port to the destination port
through a connectivity apparatus, coupled to the first and the destination ports, the
connectivity apparatus including a plurality of data buses,

wherein the number of data buses utilized to transfer the frame data received
by the first port is the same irrespective of whether the link speeds of the first and
second port are the same or different.

~~11 76~~. (New) A method for interconnecting attached Fibre Channel devices a switch
comprising the steps of:

receiving an incoming frame at a first port,

determining the destination port to route the first frame,

the destination port's link speed being different from the first port, and

transferring the Fibre Channel frame from the first port to the destination port through a connectivity apparatus, coupled to the first and the destination ports, the connectivity apparatus including a plurality of data buses,

the connectivity apparatus supporting a fixed frame transfer rate and a fixed number of data buses, the same frame transfer rate and the same number of data buses being used for each frame transferred between any two ports.

12/27 (New) A system for interconnecting a Fibre Channel device with an Ethernet device at another speed, comprising:

a Fibre Channel port adapted to support multiple link speeds,

an Ethernet port,

processor and memory to effect the protocol conversion from Fibre Channel to Ethernet, the processor and memory being coupled to the Ethernet port,

connectivity apparatus, the connectivity apparatus disposed between and coupled to the Fibre Channel port, and the processor and memory,

a plurality of data buses, the data buses connecting the Fibre Channel port to the connectivity apparatus,

wherein the number of data buses utilized to transfer the frame data received by the Fiber Channel port is the same irrespective of the link speed of the Fibre Channel port.

13/28 (New) A method for sending frames between a Fibre Channel network operating at one speed and an Ethernet network operating at another speed, the method comprising the steps of:

receiving an incoming frame at a first Fibre Channel port at a first speed,
determining the destination port which to route the first Fibre Channel frame,
the destination port contained within a protocol conversion module, the destination
port being coupled to an Ethernet network,

transferring the Fibre Channel frame from the Fiber Channel port through a
connectivity apparatus to the protocol conversion module, the connectivity apparatus
transferring all frames using a constant number of data signals and a constant clock
rate,

converting the Fibre Channel frame to a frame format compatible to being
transmitted on an Ethernet network, and

transmitting the frame out the destination port.

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~~79~~. (New) The apparatus of Claim ~~60~~¹ wherein the connectivity apparatus includes a
crossbar switch.

¹⁵
~~80~~. (New) The apparatus of Claim ~~71~~⁶ wherein the connectivity apparatus includes a
crossbar switch.

¹⁶
~~81~~. (New) The apparatus of Claim ~~74~~⁹ wherein the connectivity apparatus includes a
crossbar switch.

¹⁷
~~82~~. (New) The method of Claim ~~75~~¹⁰ wherein the connectivity apparatus includes a
crossbar switch.

¹⁸
~~83~~. (New) The method of Claim 76 wherein the connectivity apparatus includes a
crossbar switch.

¹⁹
~~84~~. (New) The system of Claim ~~77~~¹² wherein the connectivity apparatus includes a
crossbar switch.

Patent

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85. (New)

The method of Claim *13* ~~78~~ wherein the connectivity apparatus includes a

crossbar switch.
